DOCUMENT RESUME

ED 116 573 HE 006 996

AUTHOR Millett, John D.
TITLE Allocation Decisions in Higher Education.
INSTITUTION Academy for Educational Development, Inc., Washington, D. C. Management Div.
NOTE 57p.
AVAILABLE FROM The Academy for Educational Development, 1414 Twenty-Second Street, N.W., Washington, D.C. 20037 ($2.00)

EDRS PRICE MF-$0.76 HC-$3.32 Plus Postage
DESCRIPTORS Budgeting; Colleges; *Cost Effectiveness; *Decision Making; *Educational Economics; Expenditures; *Higher Education; Program Planning; *Resource Allocations; Universities

ABSTRACT

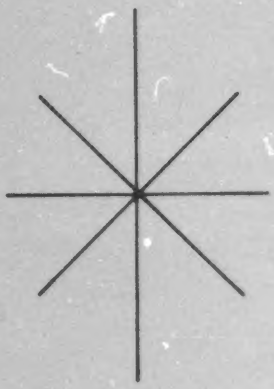
College and university faculties and students often dislike being reminded that the organization of which they are a part is an economic enterprise. Yet, each individual college and university is an economic entity, substantially concerned with obtaining and utilizing economic resources. In the process of getting and spending, colleges and universities have a choice: to behave as an economic endeavor producing and selling services or to behave as a body politic obtaining resources from taxation and philanthropy and distributing these resources as some particular power structure may determine. Related issues are: (1) allocation mechanisms in the economy; (2) allocation in higher education; (3) sharing authority for resource allocation; (4) program planning and budgeting; (5) the university and the marketing-price mechanism; (6) the college and the marketing-price mechanism; (7) expenditure-income analysis and decision making; (8) criticisms of the market-price mechanism; and (9) the challenge of allocation decisions. (Author/KE)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED116573

John D. Millett

Library
National Center for Higher Education



Allocation Decisions in Higher Education

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

AED MANAGEMENT DIVISION
ACADEMY FOR EDUCATIONAL DEVELOPMENT, INC.

HE 006 996

Table of Contents

		Page
I	Power and the Allocation of Resources	1
II	Allocation Mechanisms in the Economy	5
III	Allocation in Higher Education	11
IV	Sharing Authority for Resource Allocation	17
V	Program Planning and Budgeting	23
VI	The University and the Market-Price Mechanism	31
VII	The College and the Market-Price Mechanism	39
VIII	Expenditure-Income Analysis and Decision Making	43
IX	Criticisms of the Market-Price Mechanism	47
X	The Challenge of Allocation Decisions	55

I Power and the Allocation of Resources

Colleges and universities each budget year must distribute available income among the various program activities that the institution operates. When income is expanding because of enrollment growth, because of governmental interest, because of philanthropic generosity, or because of capital market appreciation of the endowment, then the distribution of resources is not too difficult a task. Generally, under these circumstances an incremental increase in allocations can be made to all the budgetary units of the college or university. When income growth slows down because enrollment stabilizes or declines, because governmental priorities have changed, or because of a general recession in economic well-being, then the allocation process becomes troublesome. In the past five years or so, most colleges and universities, public and independent, have had allocation problems.

Essentially the allocation problems of a college or university are the allocation problems of every enterprise and of every economic grouping: who gets how much for what service or output? Colleges and universities like to think that as enterprises concerned with preserving, transmitting, and advancing man's stock of knowledge and store of creative treasures they are especially rational in their behavior, including their behavior in the allocation of scarce resources. The difficulty with this pretense is two-fold. The characteristics of rationality in the distribution and use of resources have rarely been defined. And no matter how much we pretend otherwise, the allocation of scarce economic resources in a society or in a particular enterprise

is an exercise in power. Individuals and groups with power influence or determine, in one way or the other, the allocation of resources.

The process of allocating resources may be an economic process or it may be a political process. As an economic process the allocation of resources is supposed to represent the power of the purse, the power of those who produce and of those who consume the goods and services of an economic enterprise. As a political process, the allocation of resources is supposed to represent the power of those who govern, and it distributes an extracted wealth to designated beneficiaries. Colleges and universities have no other choice. They must allocate resources by an economic process or by a political process. Man in his practical experience, wisdom, and institutional relationships has found no other mechanism.

One of the most interesting aspects of Western culture, and particularly of Anglo-Saxon culture, in the last two hundred years has been the trend to favor the economic process as against the political process in allocating resources. It is more than a coincidence that the Declaration of Independence by the colonial states of America in 1776 occurred simultaneously with the publication of Adam Smith's *The Wealth of Nations*. And as governments moved from merchantilism to laissez-faire economics in an increasingly industrialized society, governments also found it necessary or advantageous to enfranchise more and more citizens, to expand educational opportunity, and then to protect the health, safety, and morals of a people. Eventually the welfare state, and its concomitant, the administrative state, became more and more involved with a new political process for allocating some economic resources. And the culmination of the welfare state is the socialist state that utilizes once again only the political process for economic activity.

College and university faculties and students often dislike being reminded that the organization of which they are a part is an economic enterprise. Yet each individual college and university is an economic entity, substantially concerned with obtaining and utilizing economic resources. In the process of

getting and spending colleges and universities have a choice: to behave as an economic endeavor producing and selling services or to behave as a body politic obtaining resources from taxation and philanthropy and distributing these resources as some particular power structure may determine. This choice is what both the governance debates and the allocation arguments within colleges and universities in recent years have been all about.

II Allocation Mechanisms in the Economy

Economists have long recognized that no set of decisions is more difficult to make in an economy than those involving the allocation of scarce resources among desired ends. It is inevitable in any circumstance of scarce means that there shall be some conflict among individuals and groups about the needed, worthwhile, and just ends to be achieved. The resolution of any such conflict necessarily involves issues of social philosophy, of personal ethics, and of group dynamics.

For the economist the conflict of economic ends extends to such global concerns as the production of consumption goods versus the production of capital goods, the production of individual goods and services versus the production of public goods and services, the production of certain kinds of goods and services as against other kinds of goods and services, and the restrictive versus the expansive capabilities of current production boundaries. In the discussion of these concerns we hear much about the resources of labor, capital, raw material and land, energy, and technology.

The economist presents us with choices involving opportunity costs, marginal costs, and social costs. And as guidelines to the allocation process, the economist expounds concepts of economic efficiency, individual satisfaction, and social welfare. The difficulty is that these criteria of a satisfactory allocation mechanism are at best highly abstract and offer little aid or comfort to the individuals who may have to make decisions about the allocation of scarce economic resources.

In the literature of economics three different processes or mechanisms for making allocation decisions are generally set forth. One procedure is that of a market-price system in which individual producers and individual consumers determine productive output (supply) by their purchase (effective demand) of particular goods and services through the mechanism of price, prices charged and prices paid. A second procedure is that of planning, whereby through a process of governance a group of persons decides how available scarce resources shall be allocated to production endeavors turning out particular goods and services. The supply may or may not satisfy consumer wants and social welfare needs. A third procedure is commonly described as that of a "mixed economy" involving both mechanisms of market-price and of planning.

The Market-Price System

A great many economists brought up in the intellectual tradition of Adam Smith continue to place considerable value upon the market-price system for allocating scarce resources. There have even been some economic writers who think of the market-price system as a sort of economic ballot box, the one and only arrangement whereby individual consumer satisfaction can find some expression, indeed can have some impact upon productive output, prices, and the allocation of resources. A society that places a considerable value upon individual preferences, personal choices, and widespread citizen participation is necessarily a society that gives preference to a market-price system and seeks to perfect its effectiveness.

Except in discussions of socialist planning, economists in Western societies tend to discuss the allocative process of economic planning in the context of public finance. It is recognized that governments are expected to provide some goods and services for their citizens, and it is usually postulated that these goods and services must be paid for by means of taxation, which is considered as a subtraction from consumer purchases or from capital formation. The

refinements of Keynesian theory need not be added here. It is essential to mention, however, that almost all economists in the Western tradition recognize that governments through economic policy, monetary policy, and taxation policy can and do influence conditions of maximum production, maximum purchasing power, economic growth, and inflation.

Political scientists rather than economists in Western societies have been inclined to look closely and analytically at the politics of resource allocation by governments. They have portrayed with a high degree of realism the complexities in a democratic society of determining the economic ends to be achieved by planning, the scope and magnitude of such planning, and the beneficiaries of such planning. Interest groups and the politically influential seek to guide the allocation process, and the results seldom add up to a concise, coherent "economic plan."

With all of its faults and all of its rigidities, the market-price procedure for allocating resources gains its widespread acceptance in large part because of the deficiencies of its alternative, the planning procedure. If a society is disposed to give value to individualism, to some freedom of personal choice, to satisfaction of wants in terms of individual preferences, the market-price mechanism then commands substantial adherence.

The Planning System

The principal advantage of the planning arrangement is its potential for meeting individual needs not satisfied by the market-price mechanism. If an individual's contribution to market-price production is considered to be quite modest, and if an individual's wage rate is below the minimum to sustain a relatively decent standard of living, then planning becomes an available means for subsidizing or otherwise providing some better living standard. And if the market-price mechanism fails to achieve full utilization of available production resources, especially the available labor supply, then planning becomes an

alternative or supplementary device for realizing a higher output. Monopoly, oligopoly, inadequate capital investment, limited resources, extensive unemployment, maldistribution of income, galloping inflation, widespread poverty, general incompetence in governance and management—all or many of these circumstances may lead a society to embrace planning as a supplement (or even preference) to the market-price allocation of economic resources.

The principal disadvantage of planning as an allocation process is simply the substitution of the decision of a few for the decision of the many about what to produce and what to consume. There is some real doubt that the planning mechanism can be successfully carried out except by a totalitarian regime. There is some real doubt whether the planning mechanism can be economically efficient in the distribution and utilization of available productive resources. For these reasons societies with a tradition or inclination to democracy and individual freedoms are disposed to prefer the market-price mechanism to the planning mechanism as a method for allocating economic resources.

The Mixed Economy System

As we have mentioned earlier, the United States and many other societies in the Western tradition have found it necessary to develop a kind of hybrid economy, a mixed economy combining elements of the market-price mechanism and of the planning mechanism as the basis for allocating economic resources. In such a mixed economy there is some continuing tension between each part of the whole, some persons and groups striving to expand the market-price sector and other persons and groups striving to expand the planning sector. In this conflict various values and preferences are at work, resulting in some gains and losses from time to time for each sector.

In the United States with its particular political process, planning means decision making accomplished in a political structure that is both complex in arrangement and diffuse in

behavior. Policy determination involves an intricate set of relationships between various actors: a bureaucratic power structure, an executive power structure, a legislative power structure, an interest group power structure, an elitist power structure, a communications power structure, and a political party power structure. Amid the complexities of decision making in so diverse a relationship of influence and power, many individuals and groups despair of rational action and are prone to fall back once again upon the more "objective" and "even-handed," the more "automatic" and "certain" process of the market-price mechanism for allocating scarce economic resources.

This concern about the relative merits of the market-price arrangement and the planning arrangement for determining the utilization of economic resources which occurs at the macro-level of a functioning economy may be replicated at the micro-level of a functioning enterprise. Much less attention by economists and political scientists has been directed to the decision-making process within particular organizational units for the production of goods and services. Yet it is altogether possible that some of the same arguments about allocation of resources that go on for the American governmental system and the American economic system as a whole also apply within the more restricted boundaries of governmental administrative agencies, business enterprises, and even of colleges and universities.

Furthermore, it is often not recognized that the choices between a market-price system, a planning system, and a mixed system for the allocation of scarce resources may occur at other than the national level. Most of us tend to think of "economic" planning as a federal government concern, when as a matter of fact it is a concern of every single state and local government in our country. There are some activities of government that partake of the market-price system of allocating resources, as in the use of gasoline taxes for the construction and maintenance of highways and in the use of toll charges to pay for particular roads and bridges. The market-price system plays some part in the use of public parks and

recreational facilities, in the use of museums and of performing arts centers, in the use of health facilities, in the use of athletic facilities, in the use of transportation facilities, and in the use of other publicly owned facilities.

Moreover, many individual enterprises, both business and professional, may obtain some resources through the market-price system and through the planning system. Defense industries, farm businesses, transportation industries, service businesses, health businesses, and others may sell their goods and services in the market place at a particular price, may receive some public subsidy for their continued operation, and may perform some public services on a noncompetitive bid basis. There is much more of the mixed business enterprise in the United States than many persons realize, or than they have been willing to acknowledge.

III Allocation in Higher Education

Within a college or university, the budget problem is essentially a planning procedure insofar as the allocation of scarce economic resources (income) is concerned. The college or university receives income from student charges, from governmental appropriations and grants, from investments, from private gifts and grants, and from sales and services. All of this income is of two general types: unrestricted and restricted. Unrestricted income is presumably available for use in any of the program areas of college or university activity. Restricted income can only be used for projects or programs as specified by the source of the income. Thus in fact, only a part of the income of a college of university is subject to a general planning process.

Income

Actually, a clear distinction between unrestricted and restricted income is not simple to make. The definitions tend to be made by colleges and universities themselves, and the definitions tend to reflect the purposes and policies peculiar to each institution. Sometimes state boards of higher education have undertaken to define the two categories of income in terms particular to the fiscal procedures of the individual state. Even where by definition a particular kind of income may be labeled "unrestricted" income, the source may be such as to suggest that the income should be used only for a particular purpose.

In large part, the income of auxiliary enterprises is market income. It is income derived from the sale of goods (rooms and food) or from the sale of services (an intercollegiate athletic contest). Much of the income is derived from charges to students, and student representatives often express the point of view that the charge should just be high enough to meet current operating costs, including current debt service. If a college or university were to build a considerable surplus from such income, there would be a good deal of student and other criticism of this action. Furthermore, colleges and universities endeavor to keep charges within reasonable limits in order to maintain costs to students at as low a level as possible, and in recent years in an effort to fix prices that are competitive with those of private enterprise and with those of other colleges and universities.

Tuition Income

Even income derived from tuition charges to students raises certain issues about proper pricing and appropriate use. The common practice of all colleges and universities is to regard tuition income as unrestricted income. Moreover, the usual practice is to fix the same tuition charge to all students, regardless of the instructional program in which the student is enrolled, either in terms of field of study or level of study. There has been some departure from this prevailing practice in the field of medical instruction, and in some state universities in recent years there has been differential pricing of tuition by level of study: one price for lower division study, one price for upper division study, and a third price for graduate study.

This tuition income is obviously generated by student enrollment in particular fields of study and at particular levels of study. It is a well known fact of higher education finance that the costs of instruction per student are different by fields and by levels. The exact relationship among these costs, or the exact differential in these costs, is almost always somewhat difficult to determine and subject to a good deal of argument. But it is generally understood that the instructional expen-

ditures per student in English are less than the instructional expenditures in chemistry, that the instructional expenditures per student in business management are less than the instructional expenditures in engineering, that the instructional expenditures per student in law are less than the instructional expenditures in medicine, and that the instructional expenditures per student at the lower division level are less than the instructional expenditures at the doctoral level.

Because of these differentials in instructional cost, some question is apt to arise about the relationship of total tuition income by field and level of study to instructional expenditure. In some instances tuition income per student may exceed instructional expenditure per student; in other instances instructional expenditures per student may substantially exceed tuition income per student. When the first situation occurs, the question may be asked: why should not the price be lowered? And when the second situation occurs the question must be asked: where is the additional income to meet expenditure requirement to be obtained?

Thus, even income from tuition charges considered to be a general pool of income subject to a planning allocation may in fact be less unrestricted than some faculty members and some administrative officers may think. If the use of such income becomes a matter of internal debate and dispute on the part of students and faculty members, then this income begins to be looked upon as restricted to use by the instructional program that generates the income. We shall return to this subject for further discussion later in this paper.

There are still other complications to this matter of income generation and expenditure allocation. State government and even federal government appropriations may be based upon providing a particular subsidy per student by a field or level of study. The question then arises whether or not this income is unrestricted or restricted income. The annual federal government appropriation to 1862 land-grant universities is usually considered unrestricted income, although the amount could easily be absorbed by the costs of agricultural instruction. The federal government subsidies for education in the

health professions, and especially in medicine, must be considered as restricted income. Although state governments often appropriate support to state universities in lump-sum amounts, the state formula (if there is one) may suggest how the appropriations are to be spent. Much gift and grant income is restricted income, and contract income is of course restricted income.

The income circumstances of colleges and universities, therefore, raise two important considerations. One question is that of just what income falls within the discretionary use of the institution itself. The other question is that of the basis upon which discretionary income shall be allocated among various program activities of the institution. It is this second question which presents problems of governance, leadership, and management for colleges and universities.

In the recent financial reports of seven research universities, the distribution of total expenditures was found to be as follows:

	Total Amount (Millions of Dollars)	Percent Distribution		
		Unrestricted	Restricted	Auxiliary Enterprises
A.	240	70	26	4
B.	235	49	42	9
C.	190	37	59	4
D.	160	58	26	16
E.	155	62	31	7
F.	150	54	40	6
G.	100	56	33	11
Average	176	55	37	8

Unrestricted income was obviously defined in different ways by these universities, since the range of unrestricted in-

come was quite substantial, from 37 percent of total income to 70 percent of total income. On the average, for these seven universities about half of all income was considered to be unrestricted income. It was this one-half of all income that was subject to an allocation procedure.

If we look at a group of liberal arts colleges, the record is somewhat different. For five such colleges, recent financial reports indicated the following distribution of income:

	Total	Percentage Distribution		
	Millions of Dollars	Unrestricted	Restricted	Auxiliary Enterprises
A.	5.4	65	11	24
B.	7.7	73	7	20
C.	8.2	58	12	30
D.	7.5	60	7	33
E.	13.8	68	6	26
Average	8.5	65	9	26

About two-thirds of the income of a liberal arts college in this small sample was unrestricted and so subject to an allocation process. The situation here is considerably different from that of the research university. Since the research university is by definition heavily involved in the performance of research projects and the operation of research facilities, and since research income is almost always restricted income, there is a smaller proportion of total income subject to allocation at these institutions.

It is also notable that a larger proportion of the income of this sample of liberal arts colleges was derived from auxiliary enterprises than was the case with the research univer-

sities. It happens that in this sample all five liberal arts colleges were residential institutions, housing a sizeable proportion of the students they enrolled. Also, in the case of these liberal arts colleges, student tuition charges and a considerable part of both investment and gift income were considered to be unrestricted income. This circumstance helped to increase the proportion of all income available for allocation.

IV Sharing Authority for Resource Allocation

The allocation of the scarce resources of a college or university legally lies within the authority and responsibility of a board of trustees; that is, within the authority of a governing board. A major issue within many colleges and universities in recent years has been that of who should advise the board of trustees about the desirable allocation amounts. For a long time the authority to prepare an institutional budget and to recommend the distribution of available income was vested in the president of a college or university. At a time when colleges and universities generally had very modest income receipts, and later when colleges and universities were enjoying considerable increments of additional income year by year, the authority of the president was held to be legitimate and was seldom challenged.

As the financial circumstances of many colleges and universities began to change, especially after 1968, and as the incremental expansion of income began to slow down, student representatives and faculty groups more and more frequently expressed a desire to participate in the allocation process. These representatives expressed an interest in being consulted about resource allocation, and in some instances expressed the position that a college or university senate should approve a budget before it was presented to the board of trustees for official action.

In some colleges and universities some kind of formal procedure was established in order to review prospective income and expenditure and to indicate the desirable allocation

for the president's consideration. There was some uncertainty about the status of this review and recommendation procedure. Was the action of a senate binding upon the president or simply another set of proposals to be considered before the final recommendations were prepared for official approval by the board of trustees? Presidents preferred to regard the action of a senate or senate committee as advisory; senates preferred to regard their action as binding upon the president.

There was a further procedural concern. Before a senate or senate committee could consider an institutional budget, someone had to prepare a budget. Was initial preparation of a budget the province of the president, or should the budget committee of a senate have its own budget officer to prepare a budget for review and comment? Presidents were inclined to believe that initial budget preparation was their task. Senates and senate committees were inclined to believe that initial budget preparation should be performed through their own arrangements.

In colleges and universities where no formal machinery of a budget allocations committee and of a college or university senate was established, some informal consultative devices were likely to be instituted by presidents in recent years. Such informal consultation was highly desirable for at least two reasons. One reason was the utility of such consultation as a device for more effective communication within the academic community between administration and faculty members and students. By having at least some small number of faculty members and students fully informed about the income and expenditure choices of the institution, administrators could hope that this information would in turn be communicated to other faculty groups and student leaders. A second reason was the need for presidents to be able to say to boards of trustees when presenting their budget recommendations that there had been some consultation with faculty members and with students. Boards of trustees have been inclined to expect and to want such consultation in the light of the student and faculty attitudes evidenced in the past decade.

Whether the role of faculty and students in developing budget proposals is formalized or is expressed informally, this participation raises in an especially acute way the issue of the rational basis upon which scarce resources are distributed among the various program claimants. This issue is especially acute simply because a slowdown in the growth of incremental financial support for colleges and universities means that all claimants will necessarily suffer some disappointment in their expectations built up from past experience. The issue is also acute because it involves questions of program changes, program priorities, and individual merit. These are all questions that are peculiarly troublesome within an academic community. These are all questions that the allocation process must answer.

Two observations are in order. Insofar as unrestricted income is concerned, the allocation process within a college or university is essentially a procedure of institutional planning. The allocation of scarce resources is based upon a decision-making procedure involving the expression of a judgment about the value and worth of particular programs and particular persons. The expression of such a judgment is by definition the allocation of resources by planning as opposed to the allocation of resources by market-price. Secondly, a planning procedure for the allocation of resources is a political procedure, a manifestation of power.

In the days when presidents and boards of trustees exercised this power of resource allocation with a minimum of faculty and student involvement and oversight, it may be said that power was handled as a matter of trusteeship, as a matter of expressing the best collective judgment of a few persons about the program objectives to be served and the faculty members to be encouraged. In more recent years this kind of trusteeship has been criticized as undemocratic, as excluding the voice of important constituent groups of the academic community. As a consequence, participation in allocation decisions has been demanded and, in considerable degree in various places, has been accommodated.

The consequence of extensive participation in allocation decisions is not to eliminate either the planning nature of resource allocation or the political nature of the allocation process. Rather, political power has simply been diffused. Whereas at one time the political power to make decisions on the allocation of resources was concentrated in the hands of a few persons (the president and trustees), in more recent times the political power to make these allocation decisions has been extended more widely to additional groups in the academic community. The principle of trusteeship has given way to the principle of consultation, participation, and influence exercised by faculty and student groups.

It may of course be argued that the academic community more properly should be governed by the principle of consultation and participation than by the principle of trusteeship. But however one views this choice of power structure, one should not blind himself to the fact that in either case the decision-making process entails the use of power. When power is diffused and extended to various participants, then some means must be found to accommodate the interests and concerns of the participants in the exercise of power.

The customary procedure in a so-called democratic or diffused structure of power is to achieve accommodation of various persons and groups insofar as possible through decisions supported by a coalition of groups and of influential persons. This accommodation is sometimes called consensus building, compromise, and even logrolling. Presumably this accommodation represents "the public interest," but it has long been understood that there are no objective criteria to define the public interest. In a diffused power structure, the public interest is the widest possible accommodation of special interests.

Because it has had to cope with a politically diffused power structure only in recent years, the academic community is just beginning to develop an awareness of the complexities of decison making in this particular power context. And because this new power structure has emerged simultaneously with the appearance of new difficulties in obtaining scarce economic resources for the performance of its programs,

higher education has suddenly become especially sensitive to the power aspects of the planning process for the allocation of limited resources.

Market-Price Mechanism

It is little wonder then that administrators of colleges and universities have begun to cast about for an alternative to the planning process for allocating income. And in this casting about, the virtues of a market-price mechanism have suddenly taken on a new glow. Adam Smith has suddenly appeared as an alternative to interest group planning within the academic community.

The market-price process is commonly known as the practice of expecting every academic "tub" within the academic community "to stand on its own bottom." I first heard this concept for the allocation of resources enunciated by Dr. James B. Conant in conversation during the 1950's. He said that this allocation procedure had been practiced at Harvard University during his presidency, 1933-1953. More recently, the process of allocating resources on the basis of every tub standing on its own bottom has been discussed in a number of research universities and practiced, at least in part, by some of them. I have even found one private liberal arts college that has begun to move in this direction.

I would forecast that more and more colleges and universities in the next decade will move toward a market-price mechanism for allocating scarce income resources. I make this forecast for two reasons. As colleges and universities became more aware of the political complexities of the planning mechanism for the allocation of resources, administrators and trustees in particular will seek an alternative. In addition, as colleges and universities confront the need to change program priorities, to reduce expenditures in some fields and levels of study and to increase expenditures in some other fields and levels, they will find the market-price mechanism an objective justification for the decisions that implement these changes. I might add still a third reason: as growth in economic resources

slows down or comes to an end, more and more faculty members and students will ask questions about the allocation of resources and will be extremely sensitive to situations where high cost programs require a disproportionate share of unrestricted income.

For obvious reasons, I think colleges and universities should label the alternative to resource allocation by planning as resource allocation by "market-price." The phrase "every tub standing on its own bottom" is at best an inelegant one. Moreover, we ought to recognize a market-price mechanism for what it is. It happens that there are many social critics in the academic community who dislike the performance of the market-price mechanism in the economy and who seem to prefer governmental planning. For this reason, many college and university administrators will search for a substitute label. In one university the concept of the market-price mechanism has been described as a "decentralized approach to management." In another university the concept has been described as "income-expenditure" academic planning. These substitute designations are probably necessary in current circumstances, but they need not blind us to the realities of the allocation mechanism now being explored in various academic communities.

V Program Planning and Budgeting

Before we turn to an examination of how the market-price mechanism might operate in a research university and in a separate liberal arts college, we need to explore briefly the program planning and the budget framework within which this mechanism would operate. Like other kinds of enterprises, a college or university has various cost centers that make up the budget and accounting units of the operation. These cost centers include the academic departments, the offices of academic deans, research projects and centers, public service projects and units, the academic services (libraries, audiovisual service, computer service, museums and galleries), student services, and institutional services. Through these cost centers the programs of a college or university are undertaken and accomplished.

The National Center for Higher Education Management Systems has developed a program classification structure for colleges and universities, and with some modifications this program classification structure has been incorporated into a recommended chart of accounts by the National Association of College and University Business Officers in Part 5, *College and University Business Administration* (1974).* The program

*The NACUBO chart of accounts employs the words "scholarships and fellowships" rather than "student aid." I prefer "student aid" as a more inclusive term. Moreover, I consider student aid to be a primary program and not a support program: its purpose is to broaden access to higher education.

classification structure for activities and expenditures is as follows:

Primary Programs

Instruction
Research
Public Service
Student Aid

Support Programs

Academic Support
Student Services
Institutional Support
Operation and Maintenance of Plant
Mandatory Transfers
Non-Mandatory Transfers

Auxiliary Enterprises, Hospitals, and Independent Operations

Auxiliary Enterprises
Hospitals
Independent Operations

These program categories would bring together all the cost centers of a college or university. An institution might show all cost centers as details of these program groupings, or there might be intermediary groupings between the cost centers and the program classification structure.

Support Costs

The support programs are often referred to as the "overhead" activities of a college or university. These programs are essential to the operation of a college or university as an ongoing enterprise. At the same time, in order to obtain a "true" record of the expenditures for the primary programs,

the costs of these support programs or of overhead must be distributed or shared by the primary programs. There is a good deal of concern in various colleges and universities about the cost magnitude of these support programs and about the desirable relationship of support costs to primary program costs.

There is substantial evidence which suggests that support costs per full-time equivalent student tend to increase the smaller the enrollment size of an institution, and to decrease the larger the enrollment size. There is also a good deal of evidence to indicate that federal government legislation in recent years has had the impact upon institutions of increasing support costs; such an effect has resulted from equal employment opportunity regulations, affirmative action requirements, student aid programs, occupational health and safety laws, unemployment compensation, workmen's compensation, the records access law, and nondiscrimination laws.

Larger colleges and universities have found in many instances that support program costs have a 35 to 65 ratio in relation to primary costs. Thus in a ten million dollar budget for educational and general activities (all programs except auxiliary enterprises, hospitals, and independent operations), 6.5 million dollars might be devoted to the cost of primary programs and 3.5 million dollars might be devoted to the cost of support programs. There is a real danger, however, that as the inflation in fuel costs drives plant operating costs higher, and as federal laws and other forces drive support costs higher, any such 35-65 ratio will be very difficult if not impossible to maintain.

Primary Program Costs

Among the primary programs of instruction, research, public service, and student aid, there are substantial differences in the nature of the activities. Instruction is provided by academic and professional departments, some of which may be consolidated into a single school or center. Instruction expenditures, moreover, may include faculty time devoted to in-

dividual research and to individual public service efforts. Research expenditures separately budgeted involve project research, and almost always entail some special (restricted) source of external support, such as a government grant or a private foundation grant. Public service activities (other than a teaching hospital) are usually organized as projects, although the agricultural extension activity is organized as a continuing service. Here again separately budgeted public service projects involve some special source of support, such as an earmarked appropriation, grants, or charges for service rendered. Student financial aid, on the other hand, is usually administered through some central office of a college or university, and again involves special as well as general sources of income.

Student Aid

No expenditure category of a college or university raises more problems of policy and procedure than student aid. The complexity of the issues arises from a confusion of purposes. Ostensibly, most college and university administrators would agree that the basic purpose in student aid expenditures is to ensure access to higher education for students regardless of their family income status. In practice the difficulties that arise are several. We may pass by the problems of identifying students who should be afforded access to higher education and of determining the amount of financial assistance needed to ensure access for these students. These complexities can be resolved in some fashion. An open admissions policy, for example, affords universal access, and a needs analysis procedure can determine the amount of assistance required.

The troublesome policy issues to be resolved in a student aid program involve basic purpose. Shall student aid be administered primarily as a means to recruit outstanding talent (academic, artistic, athletic)? Shall student aid be administered primarily to encourage enrollment by blacks, by women, by other persons from minority groups? Shall student aid be limited to the amount of funding provided from governments and from gifts for this purpose, or shall general (unrestricted)

institutional income be used by a college or university to augment student aid expenditures? Every college or university has to wrestle with these policy issues in allocating resources for student aid.

Scarcity of Income

Presumably every college and university experiences income constraints, a scarcity of revenue resources. The revenue resources as classified in the 1974 manual of the National Association of College and University Business Officers are as follows:

Tuition and Fees
Federal Appropriations
State Appropriations
Local Appropriations
Federal Grants and Contracts
State Grants and Contracts
Local Grants and Contracts
Private Gifts, Grants, and Contracts
Endowment Income
Sales and Services of Educational Activities
Sales and Services of Auxiliary Enterprises
Sales and Services of Hospitals
Other Sources
Independent Operations

An individual college or university is not likely to have income from each of these sources. Federal appropriations are made only to federally sponsored or federally related institutions (the five service academies and two or three institutions in the District of Columbia), as well as to 1862 Morrill land-grant universities. State appropriations are made to state universities and colleges, to community colleges and technical institutes, and in a few states to independent institutions. Local appropriations are made mostly to community colleges and technical institutes. Obviously only a university with a medical school and a teaching hospital will receive in-

come from hospital operations. Only a university with an independent operation (usually a federally funded research center) will have income from such an operation.

As mentioned earlier, all income is classified as unrestricted or restricted. The allocation of restricted income must necessarily be made in accordance with the terms of a grant or gift; such income must be allocated to the program expenditure category and to the cost center as specified. Unrestricted income is subject to allocation by the governance authority of a college or university. Such income is allocated to cost centers within the various categories of primary programs, support programs, and special operations (auxiliary enterprises, hospitals, and independent operations). It is in this process of allocating unrestricted general income that political pressures arise.

Moreover, it needs to be pointed out that a decline in restricted income may be troublesome for a college or university to accommodate. Most universities have adopted the policy that they will allocate for sponsored research projects and for various public service projects only such restricted income as may be provided from governmental and other sources for these purposes. Some colleges and universities have adopted the policy of allocating only a fixed amount from unrestricted revenue for student aid, relying upon restricted income from governments and other sources to meet most expenditures for this purpose. When restricted income begins to decline because of changing policies and priorities, primarily within the federal government, then colleges and universities find that they may not be able to make proportionate reductions in expenditures. Students receiving financial assistance may expect a continuation of such assistance and may even demonstrate or disrupt the work of the institution in their expression of this expectation. Faculty members and graduate research assistants receiving all or part of their compensation from restricted sponsored research grants may have tenure status or student status that a university considers itself obligated to honor. The curtailment of activities when restricted income is curtailed is not as simple a management task as it might seem.

The allocation process in a college or university has two phases. The first phase is consideration of how to increase institutional revenues. The second phase is consideration of how to allocate institutional revenues among programs and cost centers. In fact, of course, both phases may be pursued at the same time. The important factor is that an increase in revenues, if this increase is at all feasible, is always a potential relief to the complexities of resource allocation.

Unfortunately, some faculty members and some other members of an academic community may believe that it is the president's job to cultivate new revenue resources. These individuals insist that they participate in expenditure decisions but often seek escape from income decisions. This pattern of behavior is not too different from that in many legislative assemblies. Most individuals find it easier to spend money than to raise it. The revenue problem of many presidents of colleges and universities is how to encourage and to motivate faculty members to assist in increasing revenues. And a corollary problem is how to develop among faculty members and others an acute awareness of the interrelationship between expenditure patterns and income patterns of the institution.

In an effort to motivate change in faculty behavior as changing circumstances overtake all academic enterprises, and in an effort to enlist faculty interest in finding ways and means to increase the revenue resources of their institutions, some presidents have begun to look at the potential of a market-price mechanism in allocating resources. The essence of this market-price mechanism is an interrelationship of income and expenditure at a management level within the institution meaningful to faculty members. As a consequence, the market-price mechanism must be applied in a university at the level of colleges, and in a separate college must be applied at the level of academic departments or academic divisions (centers).

VI The University and the Market-Price Mechanism

Let us first look at the process by which the market-price mechanism might be applied within a university. A university usually consists of several component colleges. These colleges may include the humanities, the social and behavioral sciences, the biological sciences, the physical sciences and mathematics, the administrative sciences, education, engineering, fine and applied arts, law, medicine, nursing, and social work. If a university president wishes to analyze the expenditure-income status of each of these academic units, there is a relatively simple procedure for doing so. Let us use a college of engineering in an independent university as a first illustration. The record might be as shown in Table 1 (the illustration is entirely hypothetical).

The hypothetical expenditure-income relationship of a college of engineering in a state university might be as shown in Table 2.

The contrasts in expenditures and income between a college of engineering in an independent university and a college of engineering in a state university are noteworthy, although the differences are not the principal concern here. The point is that in both an independent university and in a state university the method of analysis and of decision making can be similar, even though the particular decisions to be made are necessarily different. Before we consider the decisions in-

volved in each set of circumstances, however, we need to observe certain details of the procedure itself.

TABLE 1

COLLEGE OF ENGINEERING
OF AN INDEPENDENT UNIVERSITY

Expenditures	**Last Year**	**Current Year**	**Next Year**
Departmental Instruction	$1,500,000	$1,650,000	$1,750,000
Research	400,000	350,000	350,000
Public Service	50,000	50,000	50,000
Student Aid	150,000	140,000	140,000
Academic Support	160,000	170,000	170,000
Student Services	320,000	300,000	310,000
Institutional Support	220,000	240,000	250,000
Plant Operation	480,000	520,000	550,000
	$3,280,000	$3,420,000	$3,570,000
Income			
Tuition and Fees	$1,500,000	$1,600,000	$1,600,000
Federal Grants and Contracts	700,000	650,000	650,000
State Grants and Contracts	10,000	10,000	10,000
Private Gifts and Grants	250,000	260,000	260,000
Endowment Income	125,000	125,000	125,000
Sales and Services	200,000	200,000	200,000
Other Sources	30,000	30,000	30,000
	$2,815,000	$2,875,000	$2,875,000
(Deficit)	($465,000)	($545,000)	($695,000)

TABLE 2

COLLEGE OF ENGINEERING
OF A STATE UNIVERSITY

Expenditures	Last Year	Current Year	Next Year
Departmental Instruction	$ 8,000,000	$ 8,500,000	$ 9,100,000
Research	5,000,000	5,400,000	5,400,000
Public Service	100,000	100,000	100,000
Student Aid	300,000	320,000	350,000
Academic Support	600,000	610,000	630,000
Student Services	600,000	610,000	640,000
Institutional Support	1,200,000	1,250,000	1,350,000
Plant Operation	2,000,000	2,300,000	2,600,000
	$17,800,000	$19,090,000	$20,170,000
Income			
Tuition and Fees	$ 2,300,000	$ 2,500,000	$ 2,700,000
Federal Appropriations	100,000	100,000	100,000
Federal Grants and Contracts	7,500,000	8,500,000	8,500,000
State Grants and Contracts	300,000	300,000	300,000
Private Gifts, Grants, and Contracts	100,000	100,000	100,000
Endowment Income	25,000	25,000	25,000
Sales and Services	1,000,000	1,100,000	1,200,000
Other Sources	25,000	30,000	35,000
	$11,350,000	$12,655,000	$12,960,000
State Allocation Required	$ 6,450,000	$ 6,435,000	$ 7,210,000

Direct Expenditures

Expenditures for departmental instruction include faculty compensation, faculty support, supplies and other costs, and the cost of the dean's office. The research expenditures include the direct costs of sponsored research projects undertaken by faculty members attached to engineering departments. These expenditures include also the costs of the engineering experiment station reporting to the dean. The public service expenditures are the expenses of continuing education short courses offered by faculty and other personnel attached to the college of engineering. The student aid expenditures are the costs of scholarships and fellowships awarded to students majoring in the engineering departments, as well as the amount of the remission of tuition fees for teaching assistants and research assistants. The costs of student aid grants based on student need have not been included here but have been considered as an overall expenditure of the university. These four categories of expenditure—departmental instruction, research, public service, and student aid—are the direct expenditures of a college of engineering for the "primary" programs of the college.

It should be noted that these direct expenditures are presented here solely in terms of total dollars. No attempt has been made to divide student aid expenditures between amounts for undergraduate and amounts for graduate students. No attempt has been made to divide public service expenditures between costs of short courses and costs of any other public service projects. No attempt has been made to divide instructional expenditures between costs of undergraduate instruction and costs of graduate instruction. These are refinements of analysis useful in any individual instance, but refinements that necessarily follow upon the aggregation of expenditure data as shown herewith.

Indirect or Shared Expenditures

The other categories of expenditure for a college of engineering represent the college's "fair share" of the indirect

or support program costs of the university. Usually these expenditures are aggregated for the university as a whole, since these support programs are generally operated on a university-wide basis. As a consequence, a university must develop some method for distributing support program costs to the primary program costs of academic units such as a college of engineering. There are various means for allocating such costs: academic support on the basis of enrollment or upon the basis of departmental instruction costs; student services on the basis of enrollment; institutional support on the basis of enrollment or on the basis of total direct (primary program) costs; and plant operation on a square footage basis or on the basis of total direct costs. These particular practices in distributing support costs are familiar ones; other, more sophisticated, but also more expensive practices are available.

I am not advocating any particular distribution practice. I am simply pointing out that the distribution of support program costs is not a formidable difficulty in this kind of expenditure analysis. Moreover, it should be mentioned that some universities do not distribute all support program expenditures to instructional units. If there is some endowment or gift and grant income earmarked for the library, this income may be deducted from library expenditures and only net expenditures are then distributed to instructional units. If a university operates a development or public affairs program on a net income basis—the costs of soliciting external support being deducted all or in part from private gift income—then these expenses may not be distributed to instructional units at all.

Balancing Income and Expenditure

Let us now look at the income calculations in our two illustrations. The first obvious observation is that in the independent university income for the college of engineering does not equal expenditures, while in the state university illustration the balance between income and expenditure is provided by the allocation of the state appropriation. This outcome bespeaks a basic difference between an independent university

and a state university. The independent university may have some general unrestricted endowment and gift income not earmarked for the specific use of a college of engineering, or any other academic division. The basic financial problem for an independent university then is to make certain that the total deficits of all academic units do not exceed the total unrestricted endowment and gift income available for allocation.

In the case of a state university, the balancing item between expenditure and income is the state appropriation. The state university must divide the state appropriation among all instructional units in such a way that the total of these allocations does not exceed the total state appropriation. If the state government appropriates subsidies to the state university on a program budget formula—in my judgment such a formula is the only justifiable basis for making these appropriations—then the amount shown in this analysis would equal the subsidy provided for the college of engineering. Most, if not all, state universities operate under restrictions of state law or other regulation that require a balancing of current expenditures and current income. State universities are usually prohibited from incurring a current operating deficit.

The income shown as derived from tuition and fees is simply calculated. This income represents total credit hours of instruction produced by the engineering faculty multiplied by the tuition charge per credit hour, plus any incidental fees (laboratory, etc.) that may be charged to students enrolled in engineering courses. Some universities utilize an elaborate procedure (the induced course load matrix) to determine cross registrations of students; that is, engineering students enrolled in courses offered by non-engineering departments and students from non-engineering departments enrolled in courses of engineering departments. As a consequence, there is both a transfer in and a transfer out of tuition income from a particular instructional unit, such as a college of engineering. I think this procedure is unnecessarily elaborate and expensive to compute when a far simpler and equally effective procedure is available.

Income from federal appropriations represents the annual federal appropriation to 1862 land-grant universities. Neither university receives any local government appropriation. The income from federal grants and contracts represents the total income for both direct and indirect costs received by engineering research projects, plus any grant income for graduate student fellowships. Income from state grants and contracts represents any research income received through state government agencies. Income from private gifts and contracts is only such income of the university as is restricted in use for the college of engineering. The same limitation applies to endowment income. Income from sales and services represents income from the conduct of short courses, and from the provision of any special services rendered to an outside clientele by engineering faculty members. Other income is such miscellaneous income as does not readily fit any of the other categories.

The state appropriation for the college of engineering is the proportion of a total state appropriation needed to balance income and expenditures. The vital question in this connection is whether or not the amount of this allocation represents a "fair share" for the college of engineering in relation to all other instructional units of the state university. We shall return to this question later in the discussion.

We have used only a single illustration here, a college of engineering. The kind of analysis suggested in this discussion is meaningful for a research university, public or independent, only if the analysis is applied to all instructional units as enumerated earlier. It is essential to construct a "spread sheet" that sets forth the details of income and expenditure for every instructional unit. Only then is a research university prepared to understand and to analyze the income-expenditure or market-price status of the university as a whole.

VII The College and the Market-Price Mechanism

The income-expenditure or market-price mechanism of financial analysis can be applied to a separate general baccalaureate college as well as to an independent university or to a state university. In many ways such an analysis for a baccalaureate college is relatively simple to make compared with that for a research university. On the other hand, such an analysis also raises difficult issues involving what a separate baccalaureate college "ought" to provide to its students.

The accompanying table is a hypothetical market-price analysis for an independent general baccalaureate college. The expenditure-income relationship for the colleges as an entity is one of balance. The total expenditures of the college in this particular illustration are as follows:

Instruction	
Day	$1,968,000
Evening	296,000
Student Aid	320,000
Academic Support	181,000
Student Services	415,000
Institutional Support	545,000
Plant Operation	545,000
Transfers	150,000
TOTAL	$4,420,000

The total income of the college in this illustration is as follows:

Tuition	
Day	$3,350,000
Evening	460,000
Endowment	150,000
Gifts and Grants	
State	170,000
Nursing	70,000
General	200,000
Other	20,000
TOTAL	$4,420,000

In this illustration all reference to auxiliary enterprise expenditure and income has been omitted. It has been assumed that institutional policy and practice ensure a balancing of this income and expense. The focus of attention here is educational and general expense and income.

In the accompanying table a comprehensive analysis is set forth of expenditures and income by the principal academic divisions of the college. It will be noted that in this analysis nine divisions are shown. Variations in expenditure result from the size of departments and faculty workload; a common average faculty compensation has been assumed throughout the college. In this particular college, the evening instruction is assumed to be provided primarily by part-time faculty members, or as an "overload" by the regular full-time day faculty. It has also been assumed that the college charges lower student credit hour tuition for evening students.

Variations in tuition income by divisions result from variations in student enrollment. Each division has been allocated tuition income as "earned" by its enrollment on a total student credit hour basis. Endowment and gift income has been distributed on the basis of "favoring" the high cost instructional divisions. It has been assumed that the college wishes to maintain its programs in the natural sciences and in

TABLE 3
Expenditure-Income Analysis of a Liberal Arts College

Expenditures	Communi-cation	Humani-ties	Social Sciences	Nat. Science & Math.	Foreign Language	Art & Music	Education	Business Management	Nursing	TOTAL
Instruction										
Day	$128,000	$320,000	$320,000	$330,000	$210,000	$175,000	$105,000	$210,000	$170,000	$1,968,000
Evening	40,000	40,000	40,000	40,000	---	16,000	40,000	80,000	---	296,000
Student Aid	---	50,000	50,000	50,000	20,000	60,000	25,000	25,000	40,000	320,000
Academic Support	12,500	29,000	29,000	30,500	18,000	18,000	10,000	18,000	16,000	181,000
Student Services	25,500	67,300	67,300	71,300	41,800	41,800	20,400	41,800	37,800	415,000
Institutional Support	35,000	88,000	88,000	94,000	55,000	55,000	30,000	50,000	50,000	545,000
Plant Operation	35,000	88,000	88,000	94,000	55,000	55,000	30,000	50,000	50,000	545,000
Transfers	10,000	24,000	24,000	26,000	15,000	15,000	7,500	14,500	14,000	150,000
TOTAL	$286,000	$706,300	$706,300	$735,800	$414,800	$435,800	$267,900	$489,300	$377,800	$4,420,000
Income										
Tuition										
Day	$303,500	$580,500	$580,500	$476,000	$277,000	$149,000	$308,500	$466,000	$209,000	$3,350,000
Evening	69,000	69,000	69,000	41,000	---	28,000	46,000	138,000	---	460,000
Endowment	15,000	15,000	15,000	15,000	15,000	30,000	15,000	15,000	15,000	150,000
Gifts and Grants										
State	10,000	20,000	20,000	14,000	6,000	6,000	30,000	40,000	24,000	170,000
Nursing	---	---	---	---	---	---	---	---	70,000	70,000
General	---	---	---	50,000	50,000	100,000	---	---	---	200,000
Other	---	5,000	---	---	---	15,000	---	---	---	20,000
TOTAL	$397,500	$689,500	$684,500	$596,000	$348,000	$328,000	$399,500	$659,000	$318,000	$4,420,000
SURPLUS (Deficit)	$111,500	(16,800)	(21,800)	(139,800)	(66,800)	(107,800)	$131,600	$169,700	(59,800)	

art and music regardless of the high cost. Other income has been distributed according to other particular assumptions.

In this illustration, only three of the nine academic divisions produced a surplus of income over expenditures, direct and indirect. One was a lower division program, and the other two divisions, education and business management, had fairly large enrollments with a relatively small faculty.

The data shown here are not important as such. The important consideration is the technique itself. The kind of information presented here is the kind of information essential to the management of a general baccalaureate college. It is the kind of information that a president and a board of trustees ought to have at hand.

It does not follow from this kind of analysis that certain programs and courses ought to be eliminated, or that the number of faculty members in a particular discipline should be reduced. This kind of analysis is simply a first step, a beginning, in asking questions and in evaluating performance. In the absence of such information the questions and the evaluation are subjective, not objective.

VIII Expenditure-Income Analysis and Decision Making

The primary advantage in the kind of analytical framework proposed here is the contribution this analysis can make to the decision-making process about the allocation of resources. In particular, during a period of considerable change in student preferences for instructional programs and courses, some indication is needed in both universities and colleges about the impact of these changes upon expenditure patterns and income patterns.

Moreover, when a university operates an instructional program where expenditures consistently over time exceed the income generated by the program, several important questions must necessarily be asked. The first question is whether or not the institution can afford to subsidize a particular program in the required amount. If the program of instruction, as in the field of music for example, is considered to be essential to the mission and the objectives of a university or college, then the second question is how to obtain the necessary income for the operation of the program. The answer may be increased gift income, or the allocation of a large part of available investment income, or the designation of a part of the tuition charge as a student service fee to support cultural activities. A third set of questions to be asked concerns how a division can increase its income. What can be done to increase enrollment? How can the attractiveness of the program be increased? Can

more part-time students be enrolled? What new activities producing new income might be undertaken, such as instruction for non-degree credit students? A fourth and final set of questions to be asked concerns how expenditure for a program can be decreased. Can the program utilize more part-time instructors? Can the program be operated effectively with fewer faculty members? Is it time to begin the orderly phase-out of a program?

Of course the indirect costs of the institution need to be reviewed as well as the direct costs. Indeed, it is safe to predict that faculty members confronted with this particular kind of analysis will want to obtain extensive information about the program objectives and the program costs of all support programs: academic support, student services, institutional support, plant operation, and transfers. These questions deserve just as serious consideration as the questions about instructional programs, research programs, public service programs, and student aid programs.

All of these kinds of questions can be addressed and answered only in the context of the circumstances of a particular college or university. These kinds of questions have to be answered in terms of mission and program objectives, in terms of actual and potential clientele, in terms of geographical location, in terms of special strengths and opportunities, in terms of existing and potential external financial support. All of these factors mean that different responses will be appropriate to the differing circumstances of various colleges and universities.

It may appropriately be asked why the kind of analytical framework as outlined here should be considered a market-price model. This framework presupposes varied sources of income: governmental appropriations, governmental grants and contracts, private gifts and contracts, and investment income in addition to charges to students and to other clients. *Nothing presented here has been intended to suggest that colleges and universities should derive all of their income only from charges to students and other clients.* On the contrary, it has been assumed throughout this presentation that

colleges and universities would continue to derive their income from a variety of sources, including governments and philanthropy.

The emphasis here is directed to the capability of various component parts of a college or university to generate income, regardless of source. If more income is not forthcoming from enrollment of degree credit students, what other kinds of income can be obtained in order to maintain the quality and viability of essential programs? Can additional income be obtained from additional activities of a research or public service nature? Can additional income be solicited from governments on the ground of the vital social utility of a program, or even of the institution itself?

Moreover, the emphasis here is upon internal adjustment within a college or university to changing student interests and to changing social situations. Resource allocation within a college or university needs to reflect changing circumstances rather than a past pattern honored in tradition but little respected in the current scene. Once again it must be emphasized that this is not a recommendation to disregard the past and to endorse only the immediately relevant. In higher education, tradition does have a rightly regarded role. A major problem for colleges and universities is how to respect tradition and still adjust to change.

Because the emphasis here is upon sources of income and upon changing circumstances in the allocation of scarce economic resources within a college or university, I believe this analytical framework may properly be labeled a "market-price" model or mechanism. Obviously the model is not constructed in the traditional sense employed by Adam Smith and by present day economists. The market-price mechanism outlined here is one peculiar to the circumstances of colleges and universities. It is a mechanism uniquely designed for a higher education institution.

The alternative to the kind of market-price mechanism is a planning mechanism for the allocation of scarce resources within a college or university. The analytical framework for a planning mechanism is past practice, with such adjustments as

the internal politics of a college of university may find acceptable. The market-price framework of analysis offers a different choice.

46

IX Criticisms of the Market-Price Mechanism

The idea of a so-called "market-price" approach to the allocation of resources within a college of university has had sufficient discussion over the years to have attracted some adverse reaction. In examining the criticisms leveled at the concept, one must differentiate between the public and private institution, and between a college and a university.

In fact, the public university has had almost no experience with the market-price analysis of resource utilization, partly because of the low-tuition tradition and the expectation of large-scale public subsidy. The issue of allocation of public subsidy arises when some particular academic unit of a public university comes to perceive that it is being "disadvantaged" in the distribution of appropriation support. It has not been unusual for a college of education or a college of business administration, or even a college of law, to develop a sense that the college of arts and sciences, or the college of engineering, or the college of agriculture—not to mention the college of medicine—receives more support per student. These differentials have had to be justified in terms of inescapable differences in program cost, differences arising from variations in student-faculty ratios, class size, faculty instructional load, and equipment requirements.

In the public university differentials in program costs and program resources have sometimes led to a consideration of differential charges to students. If the instruction of medical

school students costs more than the instruction of law school students, shouldn't the former then pay a larger tuition? If the costs of graduate instruction in the arts and sciences are greater than the costs of undergraduate instruction, shouldn't the graduate student pay a higher charge? These kinds of questions have arisen in the public university, and in some instances have resulted in the adoption of differential tuition pricing to students. Because of higher over-all tuition charges, these concerns have been less frequently mentioned in the independent university, but the same issues are present there. Indeed, it is not out of the realm of possibility that in some private universities the tuition charge to undergraduate students exceeds the cost of instruction.

The criticism that has been voiced against market-price analysis is in reality a criticism against cost analysis in public higher education. Presumably administrators and faculty members ought not to ask, or to find out, about differentials in instructional costs. Such knowledge may result in internal argument among faculty members about the relative merits of different instructional programs, and it may lead to external consideration of new pricing practices. I find it difficult to accept such criticism as justified. I hold that administrators and faculty members must know the costs of the outputs they produce and must be prepared to explain and to defend these costs. Especially is this kind of knowledge essential when the whole thrust of academic endeavor is to increase the costs of operation. In addition, if an analysis of costs results in a review of pricing practices, I see no reason why such review must be considered undesirable. Surely, all academic policies and practices must be subject to periodic if not continuous reappraisal.

Some administrators voice the fear that differential program costs and differential pricing will encourage students to enroll in low-priced programs rather than in high-priced programs. Others fear that student aid programs may not be adequate to meet the circumstance of differential pricing. It is often asserted that students should enroll in programs according to their abilities and their interests rather than according

to cost. The deficiency in this argument is the assumption that students will in fact prefer low-priced instructional programs to high-priced instructional programs. While there may perhaps be some evidence to support this belief in the enrollment experience of low-priced public higher education as against high-priced independent higher education in the past twenty-five years, even this evidence is not entirely convincing. Enrollment in the high-priced institutions has not disappeared, at least not yet.

In public universities there is also a fear that cost analysis and market-price analysis may result in the elimination of the lump-sum appropriation by legislatures. This subject of appropriation practice by state governments is a complicated matter deserving extensive discussion. I can only say here two things: I believe strongly that lump-sum rather than line-item appropriations should be made to state universities by state legislatures; and in my eight years as Chancellor in Ohio I did not find cost analysis and differential program costs a bar to lump-sum appropriation practice. On the contrary, I found legislators and legislative analysts more willing to make lump-sum appropriations when they were given as a matter of information the program components of the recommended lump-sum.

Another kind of criticism of market-price analysis has occurred in both public and independent institutions. Because of the program analysis of costs, and because in undergraduate education there is both a general component and a specialized component, some professional colleges look with fear upon the costs of instruction outside their own control. Let us use the example again of a college of engineering. In an undergraduate engineering education program, as many as one-third of the courses in which the engineering student enrolls may be non-engineering courses. The engineering student may be required by the university in order to obtain a degree to take some courses in the humanities and social sciences—in communication, literature, history, and economics. In addition, the engineering student may need in conjunction with his special interest some instruction in physics, mathematics, and

49

statistics. These courses may be taught outside the college of engineering. Yet the need for such instruction results from the existence of one or more undergraduate programs of engineering education.

In this circumstance there are devices—the so-called "induced course-load matrix" is one such arrangement—whereby the costs of this related or complementary instruction can be added to the direct costs of engineering education as a component part of the expense of engineering education. Engineering faculty members and administrators may object to this procedure on the grounds that these "uncontrolled" costs are high. Engineering deans are apt to argue that if the engineering college taught its own courses in English, history, economics, physics, and mathematics the college could and would keep the costs much lower than the actual costs they are charged with.

As I have already pointed out, there is one way to avoid this argument in a market-price analysis of program expense and income, and that method is simply not to practice any cross-costing. The instructional expense and the instructional income of each department can stand on its own, regardless of the program origin of the students enrolled. Indeed, there is considerable reason to regard all students enrolled in history as history students regardless of their specialized interest insofar as the obligations and the opportunities of the history faculty are concerned. Moreover, if indeed history instruction costs assigned to engineering students are greater than would be history instruction costs directly generated by a college of engineering, the differential will reflect a defect in cost analysis. When general education costs and specialized education costs are co-mingled, then the cost per student is likely to be higher than when the general education costs are separated from the specialized education costs. There is no inherent reason why general education costs of a history department should be higher than the general education costs of a history unit located in a college of engineering.

It has also been said that many students are not certain about their specialized interest when they enroll in a college or university and that these students should be given sufficient

opportunity to explore the various fields of learning before they select their specialized subject of concentration. There is some fear that a market-price analysis will result in faculty pressures to persuade students to a premature specialization. I do not foresee this consequence as a likely occurrence, especially if student programs are calculated upon the basis of courses enrolled in rather than upon the basis of declared major interest. Indeed, I consider this criticism as another reason why program magnitudes should be determined by course enrollments rather than by an induced course-load matrix.

Within independent universities, it has been said that some colleges are more successful in obtaining external gift support than other colleges. For example, a college of business administration may be likely to raise more money from alumni and others than a college of divinity; a college of law may be likely to raise more money than a college of education. The market-price analysis tends to encourage deans and faculty members to undertake to obtain gift and endowment income on their own rather than for the university as a whole. Perhaps this criticism has had some validity at particular times in particular places. Where the criticism does have validity, it would seem to me to be more of a commentary upon the managerial style and the fundraising ability of the university president than the revelation of a basic flaw in market-price analysis.

The primary objective of a market-price analysis is to make deans and faculty members income-expense conscious; it is to encourage deans and faculty members to become fundraisers. One of the deficiencies in academic management, I think, has been a tendency for deans and faculty members to rely exclusively upon presidents and their immediate associates to cultivate income.

Some critics of market-price analysis in higher education fear that this kind of information will encourage an expansion of low-cost programs that pay their own way and the elimination of high-cost programs that lose money. I recognize that in any academic enterprise some programs and some departments cost more per student than other departments. I do not see how the expense per student in music instruction

can be made the same as the expense per student in history instruction. I do not see how the expense per student in medicine can be reduced to the level of expense per student in law. I think everyone in higher education simply has to accept the fact that there are differentials in program costs within higher education enterprises. I believe strongly that all such costs deserve continuous scrutiny, but I believe strongly also that there is a factor of social utility which requires that some programs be more heavily or generously subsidized than may be necessary for others.

I argue that higher education administrators, faculty members, and the supporting public must be informed about differential costs and must be ready to provide effective arguments for public subsidy to the extent necessary to sustain essential educational programs. Market-price analysis is not a plea for the elimination of planning in higher education; it is a means to better informed, more effective planning.

Administrators within the separate general baccalaureate college are apt to be more fearful of a market-price analysis than administrators within a university. The college administrator professes to see in this technique a danger to the unity of the college. The college is supposed to be one undifferentiated whole; an analysis of the component departments or divisions of the college is then perceived as a threat to the integrity of the enterprise. University administrators tend not to share this particular concern; long ago they accepted the reality of the multiversity. In fact, however, the unity of the general baccalaureate college, if it did exist in the nineteenth century, has disappeared in this century. Concentration of student enrollment in a specialized discipline or even a professional field has become as characteristic of the college as of the university. In these circumstances, market-price analysis can be as useful for the college as for the university.

Finally, one other practice in most higher education institutions must be mentioned again. Most colleges and universities set aside a part of their general unrestricted income, much of it derived from student tuition charges, to provide student aid to other students. Student financial assistance is a

form of discount pricing. The discounts may be a method of recruiting desired student talent or a method for broadening access to higher education on the part of students from families of low income.

Regardless of the merit involved in taxing some students to assist other students, I believe it is very important within any particular college or university to know the extent of the practice, to know its cost, and to understand that student financial assistance is an expense item against program income. The market-price analysis is intended to provide this information. The correct procedure, in my judgment, is for all student assistance expense, other than that met by restricted income intended to broaden access to higher education, to be allocated to each instructional program in which the student has his or her major interest.

I consider student financial assistance an essential expenditure of higher education. The practice of recruiting specialized student talent may well bring benefits to all students within a college or university. Ensuring universal access to higher education regardless of socio-economic status is a proper expenditure of public funds and of philanthropic support. At the same time it must be understood that when general (as opposed to restricted) income is used for student aid, this use forecloses other possible expenditures.

There may be additional criticisms of a market-price analysis of the operations of colleges and universities. All such criticisms deserve careful consideration. But criticisms may be exaggerated, or even erroneous. Market-price analysis is first of all an informational procedure. It may or may not be the basis for allocation decisions. As an informational procedure, market-price analysis can surely advance the objective of understanding the higher education enterprise.

X The Challenge of Allocation Decisions

As the structure and process of governance has undergone change or modification in many colleges and universities in the past decade, no issue of governance has emerged as more critical than that of the allocation of scarce resources. The thrust of change in governance has been in the direction of a greater participation by faculty members and by students. New or modified structures of governance have been established to recognize faculty and student participation and to provide a legitimacy for such participation. The resulting process of governance has required a more detailed sharing of information about institutional affairs, an extensive discussion of policies and programs, some diffusion of leadership roles, and some confusion in decision making.

Faculty members tend to resist any centralized decision-making structure or process involving "academic" affairs, the issues most vital to faculty interests. These issues include the selection and retention of faculty members, the determination of course offerings and course content, the decision about appropriate methods of instruction, and the evaluation of student achievement. In these matters faculty members insist that they have a primary authority because of their professional education, experience, and competence. Only others of equal education, experience, and competence—only the academic peers in a discipline or in a professional field of study—are competent to determine or to evaluate the instructional and research performance of a highly specialized group of scholars. This position is the one generally maintained by faculty members, and with considerable justification.

But the one kind of academic decision that must be made on a centralized basis by a college or university as a total economic enterprise is the decision about allocation of available resources. Since income is derived from varied sources and since the income of any discrete college or university is limited, there is general recognition that the budget of current income and expense must be made for the institution as a whole. Academic affairs may be considered to be in the realm of the primary authority of the faculty. Budgetary affairs lie in the realm of institutional or centralized authority.

New or modified structures and processes of governance within colleges and universities have had to produce an effective means for making decisions about the allocation of scarce resources. This need has presented a new challenge to presidential leadership and a new chore for faculty and student representatives participating in the governance process. In some instances presidents have responded to new circumstances by an overloading of information and of choices presented to faculty and student representatives. In a few instances, simulation models and elaborate equations on expense growth and income stability have tended more to confuse than to enlighten the decision-making process. Technocratic know-how has even been employed to imply if not to suggest the necessity for leaving allocation decisions to administrators and trustees.

On the other hand, faculty members confronted with problems of academic aspirations and scarce income have been little disposed to establish priorities among academic programs. It has been easier to suggest the curtailment of non-academic activities, such as support programs and auxiliary enterprises. Insofar as academic programs are concerned, faculty members are likely to seek consensus on the basis of continuing activities as they are, a not unfamiliar reaction and perhaps the only possible reaction to allocation decisions made by responsible representatives in a participatory society.

The possibility of a market-price analysis of academic activities must now be evaluated as an alternative to the planning process for allocating scarce resources within the

academic community. The allocation process is not an exercise in statistics. On the contrary, the process can be an exercise in political power or the process can be an exercise in economic power. The academic community of every single college and university may well find it advantageous to all concerned to experiment with the market-price model as an alternative to the plannng model for allocating scarce resources. For the present, the market-price model may be more conducive to essential change, and to the survival of higher education itself.

John D. Millett

John D. Millett, Senior Vice President of the Academy for Educational Development and Director of its Management Division since 1972, acts as a consultant in management to colleges, universities, and state systems of higher education. He, along with the staff of the Management Division, conducted a three-year program of continuing education and publications for college and university administrators for the Kellogg Foundation and is now studying governance in higher education, a project sponsored by the Lilly Endowment.

After serving on the staff of the Social Science Research Council and the staff of the National Resources Planning Board in 1941, Dr. Millett was commissioned a major in the Army of the United States in 1942; he was advanced to the rank of Colonel and was decorated with the Legion of Merit. From 1946 to 1953 he was a member of the faculty at Columbia University; he became professor of public administration in 1948.

Dr. Millett served as President of Miami University in Oxford, Ohio, from 1953 to 1964. During these years he was a consultant to the University of the Phillipines, a consultant to the Ford Foundation, consultant to the Office of Education, a trustee of both the College Entrance Examination Board and the Educational Testing Service, president of the State Universities Association and secretary-treasurer of the National Association of State Universities. He was also active in two state government bodies studying Ohio's problems in higher education.

In 1964, Dr. Millett became the first Chancellor for the Ohio Board of Regents, a state board of higher education with planning and coordinating authority. He developed a uniform information system, a formula budgeting system, and two master plans for higher education. He retired from this position in 1972.